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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,166	09/10/2001	Tadashi Kokubo	06082.0026	9560

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EXAMINER

SHARAREH, SHAHNAM J

ART UNIT

PAPER NUMBER

1617

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/936,166

Applicant(s)

KOKUBO ET AL.

Examiner

Shahnam Sharareh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4,5,7,8,10,14,16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) 1,4,5 and 7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8,10,14,16 and 17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 15, 2006 has been entered.
2. Claims 1, 4-5, 7-8, 10, 14, 16-17 are pending. Applicant's election of Group II claims 8, 10, 14, 16-17 in the reply filed on November 15, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Further, applicant's election of silica as the species for coating material is also acknowledged. Claims 8, 10, 14, 16, 17 read on the elected species. Claims 1, 4-5, 7 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 8 is rejected under 35 U.S.C. 102(e) as being anticipated by Gray US Patent 5,885,547.

Gray teaches the process of producing radioactive microspheres by melting aggregates of yttria a thermal or plasma spray drying. (col 5, line 34-45; col 6, lines 25-40; col 9-10). Gray teaches crushing 99.99% pure yttria (yttrium oxide) which is non radioactive. (see col 7, lines 5-35). Thus, Gray meets the first step of the claim 8.

The instant claims use the transitional phrase "comprising," therefore; it does not exclude employment of other steps such as mixing the starting material with a binder. Gray melts the yttria powder in combination with a binder by passing it through a spray dryer to produce microspheres. (see *Id.*) Gray then fed the spheres into a plasma torch to produce yttria microspheres in sizes ranging 20-80 microns. (see col 7, lines 26-30). Gray states that various plasma torches can be used with different current and voltage rates. Accordingly, Gray meets the limitations of high frequency induction thermal plasma. Thus, Gray teaches the second step of claim 8.

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Gray then irradiates the yttria aggregates with neutron beams to produce radioactive microspheres. (col 5, lines 50-55)..Accordingly, Gray describes all elements of the instant claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 8, 10, 14, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gray US Patent 5,885,547 in view of Day US Patent 5,302,369.

Gray's teachings are described above. Gray also teaches the use of other ingredients such as silica in his microspheres (col 4, lines 16-26). Gray fails to explicitly teach oxide crystals consisting essentially of a mixture of yttrium and phosphor.

Day is used to teach that yttrium can be incorporated into the microspheres in combination with phosphorus and oxygen in the form of yttrium phosphates (see col 6, lines 40-62; col 16, lines 63-64; UMR-14, table II). Day provides adequate expectation of success when microspheres are in the spherical form.

Since both the microspheres of Day and Gray are used for the same purpose, it would have been obvious to one of ordinary skill in the art at the time of invention to combine yttrium oxides of Gray with the yttrium phosphate mixtures of Day, because it has been held to be *prima facie* obvious to combine two compositions each of which is taught by prior art to be useful for same purpose in order to form third composition that is to be used for very same purpose; idea of combining them flows logically from their having been individually taught in prior art. *In re Kerkhoven*, 205 USPQ 1069 (CCPA 1980).

5. Claims 8, 10, 14, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gray US Patent 5,885,547 in view of Day US Patent 5,302,369 and further in view of Huang US Patent 5,073,404.

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The teachings of Gray and Day are described above. Day indicates that radioactive microspheres can contain silica and/or further be coated with additional coating material to control the leaching of radioactive material (col 1, line 45-col 2, line 14; col 4, lines 1-14; col 5, lines 1-28; col 15, lines 1-62). However, the combined teachings of Gray and Day fail to explicitly provide for coating of their microspheres with silica.

Huang is merely used to show the conventional nature of using silica compositions in coating transparent glass microspheres and its potential benefits as antireflective and protective coating for the purposes of preventing leaching (abstract, col 1, lines 53-col 2, line 55).

Accordingly, it would have been obvious to one of ordinary skill in the art to coat the radioactive microspheres of Gray and Day with a suitable coating material such as silica, because as taught by Day, itself, and described by Huang, the ordinary skill in the art would have had a reasonable expectation of success in controlling the leaching of radioactive material from the core composition to protect the radioactive microglasses and further improve the antireflective and protective properties of such microspheres.

### ***Response to Arguments***

6. Applicant's arguments filed July 28, 2005 have been fully considered but they are not persuasive.

Applicant primarily argues that the combined teachings of the references do not teach the limitation of "high frequency induction thermal plasma." (see Arguments at page 8). In response Examiner states that as the initial matter, specification does not

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describe what is the ranges of frequencies in said this limitations. Accordingly, the term high frequency is given its broadest reasonable interpretation. Gray's teachings inherently encompass such limitation, because it specifically states the use of any suitable currents and voltage rates for his thermal induction step (col 7, lines 30-33). Examiner views Gray's current and voltage rates to encompass the instant "high frequency induction thermal plasma."

Further, Applicant has not provided any evidence or explains how the disclosures of the prior art show that the instantly claimed invention is unlikely to be productive of Gray's desired result, when Gray in fact introduces the concept of making stable yttrium-90 containing ceramic microspheres with thermal plasma torches.

### ***Conclusion***

7. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shahn timer Sharareh whose telephone number is 571-272-0630. The examiner can normally be reached on 8:30 am - 6:00 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreenivasan Padmanabhan, PhD can be reached on 571-272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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